

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of:

TAO et al.

Application No. 10/823,502

Filed: April 12, 2004

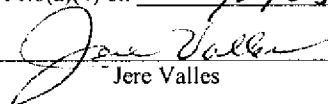
For: Target Analyte Detection Using  
Asymmetrical Self-Assembled  
Monolayers

Examiner: GROSS, Christopher M.

Art Unit: 1639 Conf. No.: 3274

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Jere Valles

**PREAPPEAL BRIEF REQUEST FOR REVIEW**

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Commissioner for Patents  
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Sir:

In accordance with 1296 Off. Gaz. Pat. Office 67 (July 12, 2005), Applicants request review of the Final Rejection in the above-identified application. This request includes no amendments, and a Notice of Appeal has been filed herewith. The undersigned is an attorney of record.

**Rejection under 35 USC 102(e)**

The Examiner has maintained the rejection of claims 1-14 under 35 USC 102 over US Patent 6,203,758 to Marks et al.

In the Final Rejection dated November 28, 2007, the Examiner contends that *Marks* in Figure 5C discloses a compound that anticipates claim 1 and claims 2-14 dependent therefrom. Applicants believe that this is a clear error of fact.

Claim 1 shows that the asymmetric monolayer forming species (AMFS) recited in the claim has structure MFS-A-A-AG, wherein A is an attachment linker moiety, MFS is a monolayer forming species, and AG is an electroconduit forming species. As previously

argued in the record, the formula for the AMFS in claim 1 shows that the MFS is directly attached to a first A and is not attached to any other part of the AMFS. Similarly, the formula in claim 1 shows that the AG is directly attached to a second A and is not attached to any other part of the AMFS. The formula shows that the two As do not together form a cyclic structure. On the other hand, Figure 5C in *Marks*, showing a cyclic disulfide that terminates a single heteroalkyl chain, clearly does not disclose a structure that is consistent with that shown in claim 1.

The Examiner in the Advisory Action states that “MFS-A-A-AG does not constitute [a] bona fide chemical structure” because “MFS, A and AG are not elements found on the periodic table” and because “MFS and AG do not constitute any art-recognized chemical functionality, such as the t-butyloxycarbonyl protecting group in peptide synthesis, commonly abbreviated ‘Boc.’”

However, it is common practice in the art to use symbols that do not appear in the periodic table or do not correspond to any one particular functionality to represent a group of chemical moieties. The most common example is the use of “R” in this respect. “R” is not found in the periodic table, nor is it any particular art-recognized chemical functionality. “R” has no fixed meaning in the art, and yet it is an art-recognized symbol that is commonly used in chemical structures to show chemical relationships, such as bonding, between depicted chemical groups and the groups that are defined by the user of the symbol.

Here, rather than using R, Applicants have chosen to use the symbols “MFS”, “AG” and “A.” These symbols are a shorthand for “monolayer forming species,” “electroconduit forming species,” and “attachment linker moiety,” all of which terms are clearly set forth in the specification as representative of various groups of chemical moieties. Thus, A may represent, for example, a silane, sulfur or amino group (specification, p. 23, lines 22 & 23); AG may represent, for example, an alkyl group of 1 to 6 carbon atoms (specification, p. 13, lines 11 & 12); and MFS may represent, for example, an alkyl group of 7 to 20 carbons in length (specification, p. 12, lines, 6 & 7). Since these symbols represent chemical groups that are known in the art, the valence of the group would also be readily discernable by one of ordinary skill in the art. The use of

symbols such as these in a figure with lines drawn between the groups to represent bonding is a common, ordinary practice by which Applicants are entitled to “describ[e] the claimed invention with all of its limitations using such descriptive means as words, structures, figures, diagrams, and formulas that fully set forth the claimed invention.” *Lockwood v. American Airlines, Inc.*, 107 F.3d 1565, 1572 (Fed. Cir. 1997). The Examiner’s refusal to acknowledge the formula in the claim for the chemical relationships that it recites is inconsistent with practice in the art and before the USPTO.

In the Examiner’s annotated Figure 5C on page 4 of the Advisory Action, the Examiner has drawn a line through one of the bonds of the cyclic disulfide moiety. It is thus apparent that the Examiner believes that it is necessary to break a bond in *Marks*’s disclosed figure in order to arrive at a structure that allegedly anticipates the claim. However, such bond breaking by the Examiner indicates that *Marks* does not teach such allegedly anticipatory structure. Furthermore, the fact that the Examiner has labeled the various parts of the molecule with MFS, AG and A shows that the Examiner fully understands that MFS, AG and A represent elements with art-recognized chemical functionalities that are bonded with proper valences.

Applicants finally note that the discussion regarding “monopodal” attachments was merely intended to illustrate the result of attaching the AMFS of claim 1 to an electrode in contrast to attaching a AMFS having a cyclized attachment point.

The structure shown in Figure 5C of *Marks* thus does not anticipate claim 1 and claims dependent therefrom. Withdrawal of the rejection is therefore respectfully requested.

### **Conclusion**

Applicants believe the claims are in a condition for allowance. Early notification thereof is respectfully requested. The Examiner is invited to call the undersigned at 415.442.1000 to resolve any questions.

The Commissioner is authorized to charge any additional fees, including extension fees, that may be required or to credit any overpayment to Deposit Account No. 50-0310 (Docket No. 067456-5036-US01).

Respectfully submitted,

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Date

May 2, 2008

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